

**AMENDMENTS TO THE CLAIMS****1-61. (Canceled)****62. (Currently Amended)** An optical-modulated signal processing system

comprising:

an optical-modulating portion operable to convert an angle-modulated signal into an optical-modulated signal;

an optical branch portion operable to branch the optical-modulated signal outputted from said optical modulating portion into at least two signals, the two signals being a first optical-modulated signal and a second optical-modulated signal;

an interference portion operable to separate a signal including at least a portion of an optical-modulated signal the first optical-modulated signal outputted from said optical branch portion into a plurality of optical signals having a predetermined difference in propagation delay and to then combine the optical signals so as to form a combined optical signal; and

an optical/electrical converting portion, having square-law-detection characteristics, operable to convert the combined optical signals into an electrical signal

a first optical/electrical converting portion, having square-law-detection characteristics, operable to convert the combined optical signal outputted from said interference portion into an electrical signal; and

a second optical/electrical converting portion, having square-law-detection characteristics, operable to convert the second optical-modulated signal outputted from said optical branch portion into an electrical signal.

wherein the predetermined difference in propagation delay is determined such that the first optical/electrical converting portion is operable to output a base band signal.

**63-66. (Canceled)**

**67. (Currently Amended)** The optical-modulated signal processing system according to claim ~~66~~ 62, further comprising:

a local light source operable to output a light of a predetermined wavelength; and  
an optical combining portion, inserted between said optical branch portion and said second optical/electrical converting portion, operable to combine the second optical-modulated signal outputted from said optical branch portion and the light from said local light source,

wherein said second optical/electrical converting portion is operable to heterodyne detect the combined optical signal outputted from said optical combining portion and then to convert the optical signal into an electrical signal.

**68. (Currently Amended)** The optical-modulated signal processing system according to claim ~~66~~ 62, further comprising:

a local light source operable to output a light of a predetermined wavelength; and  
an optical combining portion, inserted between said optical modulating portion and said optical branch portion, operable to combine the optical-modulated signal outputted from said optical modulating portion and the light from said local light source,

wherein said second optical/electrical converting portion is operable to heterodyne detect the second optical-modulated signal outputted from said optical branch portion and the optical-modulated signal into an electrical signal.

**69. (Canceled)**

**70. (Currently Amended)** The optical-modulated signal processing system according to claim 62, further comprising:

~~an optical modulating portion operable to convert an angle modulated signal into an optical-modulated signal;~~

~~an optical branch portion operable to branch the optical-modulated signal outputted from said optical modulating portion into at least two signals, a first optical-modulated signal and a second optical-modulated signal; and~~

a local oscillation portion operable to convert an unmodulated signal of a predetermined frequency,

~~wherein said interference portion is operable to separate the first optical-modulated signal outputted from said optical branch portion into a plurality of optical signals having predetermined difference in propagation delay and then to combine the optical signals;~~

~~wherein said optical/electrical converting portion comprises a first optical/electrical converting portion and a second optical/electrical converting portion;~~

~~wherein said first optical/electrical converting portion, having square law detection characteristics, is operable to convert the combined optical signal outputted from said interference portion into an electrical signal;~~

wherein said second optical/electrical converting ~~portion portion, having~~ has square-law-detection characteristics and a bias which is modulated with the unmodulated signal from said local oscillation portion, ~~is operable to convert the second optical-modulated signal outputted from said optical branch portion into an electrical signal.~~

**71. (Currently Amended)** The optical-modulated signal processing system according to claim 62, further comprising:

~~an optical modulating portion operable to convert an angle-modulated signal into an optical-modulated signal;~~

~~an optical branch portion operable to branch the optical-modulated signal outputted from said optical modulating portion into at least two signals, a first optical-modulated signal and a second optical-modulated signal; and~~

a local oscillation portion operable to output an unmodulated signal of a predetermined frequency; and

a mixing portion,

~~wherein said interference portion is operable to separate the first optical-modulated signal outputted from said optical branch portion into a plurality of optical signals having predetermined difference in propagation delay and then to combine the optical signals,~~

~~wherein said optical/electrical converting portion comprises a first optical/electrical converting portion and a second optical/electrical converting portion;~~

~~wherein said first optical/electrical converting portion, having square-law-detection characteristics, is operable to convert the combined optical signal outputted from the interference portion into an electrical signal,~~

~~wherein said second optical/electrical converting portion, having square-law detection characteristics, is operable to convert the second optical modulated signal outputted from said optical branch portion into an electrical signal,~~

wherein said mixing portion is operable to mix the electrical signal outputted from said second optical/electrical converting portion and the unmodulated signal outputted from said local oscillation portion and to output resultant signals.

72. (Currently Amended) The optical-modulated signal processing system according to claim 62, further comprising:

an angle modulating portion operable to convert a first electrical signal into an angle-modulated signal; and

a combining portion operable to combine the angle-modulated signal and a second electrical signal signal;

~~an optical modulating portion operable to convert the combined signal outputted from said combining portion into an optical modulated signal; and~~

~~an optical branch portion operable to branch the optical modulated signal outputted from said optical modulating portion into at least two signals, a first optical modulated signal and a second optical modulated signal,~~

~~wherein said interference portion is operable to branch the first optical modulated signal outputted from said optical branch portion into a plurality of optical signals having predetermined difference in propagation delay and then to combine the optical signals,~~

~~wherein said optical/electrical converting portion comprises a first optical/electrical converting portion and a second optical/electrical converting portion,~~

~~wherein said first optical/electrical converting portion, having square law detection characteristics, is operable to convert the combined optical signal outputted from said interference portion into an electrical signal, and~~

~~wherein said second optical/electrical converting portion, having square law detection characteristics, is operable to convert the second optical modulated signal outputted from said optical branch portion into an electrical signal.~~

**73. (Canceled)**

**74. (Previously Presented)** The optical-modulated signal processing system according to claim 72, further comprising:

a first signal processing portion operable to limit the occupied frequency band of the first electrical signal; and

a second signal processing portion operable to limit the occupied frequency band of the second electrical signal.

**75. (Previously Presented)** The optical-modulated signal processing system according to claim 74, further comprising:

a third signal processing portion operable to pass only a frequency component corresponding to the occupied frequency band of the first electrical signal as to the electrical signal outputted from said first optical/electrical converting portion and to reproduce waveform information which was lost by the band limitation in said first signal processing portion; and

a fourth signal processing portion operable to pass only a frequency component corresponding to the occupied frequency band of the second electrical signal as to the electrical signal outputted from said second optical/electrical converting portion and to reproduce waveform information which was lost by the band limitation in said second signal processing portion.

**76-80. (Canceled)**

**81. (New)** The optical-modulated signal processing system according to claim 62, wherein said second optical-modulated signal is not separated into a plurality of optical signals having a predetermined difference in propagation delay.